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Mastering LOTUS NOTES®

The **ONLY** Official Guide to
Lotus Notes 3.0, 3.1, and 3.2—
For Both Users and Developers

Disk Contains Ready-to-Use,
Customizable Notes
Databases



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Mastering Lotus[®] **Notes**[®]

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►► Foreword

What is Lotus Notes? That's the question that everyone has been asking since the product was first introduced five years ago.

Like so many ground-breaking products before it, it took some time for the market to grasp fully the potential of Lotus Notes. With more than 900,000 users and 5000 business partners developing Notes-based solutions, it appears that time is now. Today, Lotus Notes is the industry-standard client/server platform for developing and deploying groupware applications. Lotus Notes has become a proven solution for organizations that need to develop high-value business process applications, such as those used for customer service, sales/account management, or product development.

Clearly the groupware market—fueled by Lotus Notes—is taking off. The business opportunity facing companies that can implement groupware successfully is seemingly boundless. How do you get there? The best advice I can give you is to find a guide who can show you the way, and *Mastering Lotus Notes* may be just the guide you need.

Mastering Lotus Notes provides a comprehensive look at Lotus Notes and how it should be used. The book is helpful to both end-users who need a basic understanding of Notes and those who will be responsible for creating the applications. For managers still trying to decide whether Notes or even groupware is right for them, this book provides excellent insights into how to implement Notes applications and the benefits one can expect.

Mastering Lotus Notes presents this revolutionary product in an easy-to-learn step-by-step manner, moving logically from explaining exactly what Notes is, to using it, to creating applications. The text is replete

with examples, including a walk-through of the Notes application templates provided on disk with the book. These templates, which show how actual businesses have used Notes to improve productivity and maximize the efficiency of their employees, can be customized and used in your business. A réal bonus!

More than ever, organizations are looking to maximize productivity and reap the greatest return possible on their technology investments. Groupware, and specifically Lotus Notes, is becoming the means to achieving these goals. By clearly explaining what Lotus Notes is and how to use it, this book can help you and your organization achieve these goals as well.

John Landry
Executive Vice President and Chief Technology Officer
Lotus Development Corporation

a business environment in the same way a paper document would. This is what Notes workflow automation is all about. By recreating and improving on the circuit a document travels, workflow automation brings all of us closer to a paperless environment.

►► **What Is Notes?**

Lotus Development Corporation, the makers of Notes, refers to Notes as a *document database*, but don't let this terminology lead you to think that Notes is just a version of a traditional database. It's more useful to think of Notes as a way of organizing documents and making them accessible to groups of people than as a kind of database in the traditional sense of the word.

Unlike a traditional database, which requires that you break information into discrete *data* fragments (such as a middle initial or social security number), a *document* is the fundamental unit of information in Lotus Notes. As you know if you've worked with databases, a document has meaning; a piece of data doesn't, at least outside of the context of the rest of the database.

A document can be as long, as complex, and as unstructured as any paper document you already use. A Notes document is something like a paper document, except, of course, that you view it on screen. Like a word-processed document, a Notes document can contain complex formatting, even images. In fact, anything that can be digitized (a fax, an image, a newsfeed, you name it) can be stored in Notes as a document. Unlike a word-processing document, a Notes document can be read, revised, and responded to by many people. It won't be tossed away accidentally or lost in a file cabinet.

►► **The Benefits of Notes**

Notes' unique database structure lets you keep track of complex, relatively unstructured information, and to make that information available to groups of users on a network. As a result of this structure, Notes offers you these benefits: It keeps your information current, it keeps your information secure, and its applications accommodate the

If you are interested in creating forms, Parts Two and Three of this book will walk you through the process. However, if you're not yet familiar with the issues Notes users face, you may want to continue with the chapters in Part One before you take the plunge.

►► Composing a Document

A *document* is the fundamental unit of information in a Notes database. Figure 2.5 shows an example of a document from the Consultant Assign database. It's called a document (rather than a record) because it's analogous to a paper document.

Documents can include file attachments from other Windows applications, such as word processors or spreadsheets. This can be handy when you send e-mail to someone in your group and want to include a

FIGURE 2.5

This is a document.

The screenshot shows a Lotus Notes window titled "Lotus Notes - Entry for Stuart Baker". The menu bar includes File, Edit, View, Mail, Compose, Text, Tools, Design, Window, and Help. The document content is a form titled "Sirius Consulting" and "Consultant Directory". It contains the following information:

05/01/97	
Name:	Stuart Baker
Department:	Accounting
Title:	Accountant
Location:	Denver
Address:	1734 17th Street Boulder CO 80302
Phone Number:	(303)653-9782
Fax Number:	(303)653-9777

There is a "Save" button on the right side of the form.

file. You can also embed objects in a document—a graphic, for example—and modify them later on by using OLE (Object Linking and Embedding; see Chapter 20 for more information).

Notes uses documents to organize information because the format is familiar to people and reflects the way people work. Relationships exist between documents in the same way we might talk and relate to one another by discussing topics and issues or writing our responses.

For example, you can relate one document to another in Notes with a response. Suppose you write a memo and send it to three people. The people respond to your memo by sending you their replies. By designating the replies as responses, the recipients of your memo create a chronological hierarchy of information that others can track, and if the database is set up properly, your recipients can also incorporate information from your memo in their responses. Your memo is considered the main document and the three replies are considered the response documents.

Another example would be the way the insurance company we introduced earlier uses an underwriter evaluation document to “respond” to the policy quote document that’s written for each policyholder. (You’ll recall this document summarizes the proposed coverage of the policy and estimates the premium.) Next, an inspector completes an building construction document that “responds” to the underwriter evaluation document. (This document assesses the risk of insuring the building on the basis of its construction.) The information is disseminated over the network and viewed by different people who use the information to make decisions.

►► **Exchanging Data through Replication**

Replication is a process that lets a group of people access a database on a network and work on it at the same time, while ensuring that the database remains up-to-date. How is this accomplished? Briefly, each time you need to work on a database that’s stored on a Notes server, you can make a copy of it and then save it to your own computer. You can add or delete information if you choose and regularly send your changes back to the server. Through replication, also known as database

exchange, Notes incorporates your changes and the changes made by others, and so keeps the database current.

Notes uses database replication to distribute and update copies of the same database that may also be stored on different servers and workstations. This allows users on different networks, in different time zones, or even different locations to share information. The servers connect to each other at scheduled intervals, and the databases replicate changes to documents.

Notes compares the different copies of the same database and saves the most recent version (according to the date the changes were made) or the version with the most changes. Subsequently, the server stores the most current version of the database for users to continue to access. Replication makes all copies of a database essentially identical over time. If a user makes changes in a copy of the database, replication ensures that those changes are added to all copies, as long as the replication options are set up to do so. The process takes time and requires specific Notes server resources on a network. Your organization's Notes Administrator determines the replication schedule that makes the most sense for the company's system. (You'll learn much more about replicating databases in Chapter 18.)

►► What's Next?

Of course, the previous description simplifies the process of replication. But it illustrates the uniqueness of this database program. Notes enables people in an organization to work together more efficiently and productively by allowing them to share information in the same database. Although people can use a database at the same time, each person can actually work with a copy—or *replica*—of the database on his or her own computer. No one needs to use the database that's stored on the server.

We'll discuss the nuts and bolts of replicating databases in subsequent chapters, because making copies of databases identical over time is an important issue. But for now, we're going to put aside our discussion of Notes in conceptual terms and let you get your feet wet using Notes. In the next chapter, we take you on a tour of the Notes environment.

**NOTE**

Some databases, especially group schedule and calendar databases, will provide a fixed number of forms that you simply fill out. You enter information in these forms, but you don't actually compose new documents. For example, a calendar database could provide 365 forms, one for each day of the year, that a manager could use to track project schedules or employee vacations and leaves. A schedule database might provide a form for each day of the week, which displays the hours between 8:00 AM and 6:00 PM, that individuals could use to schedule their daily appointments. The designer's rationale is to make it easy for people in a workgroup, who need to keep track of appointments and schedules, to use the same form for displaying information (in these cases, scheduling information) that the group needs to constantly access and maintain. Chapter 23 features just such a database, which we explain in detail.

The Consultant Assignments database provides two forms from which you choose to create new documents: a Consultant Directory Entry form and a Site Location Entry form. You enter information in the documents by either typing or by using data created in other applications.

**NOTE**

Most documents display or at least store the date and time they were created and/or modified. For example, the Consultant Directory Entry form contains a Date field, which will display the current system date. Documents created locally (in databases on your hard disk) use your workstation's time. Documents created in databases that are located on servers use the server's time.

►► **I**f you often work outside your office, at home, or on the road, and still want access to your organization's databases, you're going to appreciate Dial-up Notes. Dial-up Notes is a set of Notes features that lets you access Notes via modem when your workstation isn't connected to a local area network (LAN). You can use Dial-up Notes on any computer running the Notes workstation software, including desktop computers and many laptops and notebooks.

You can use Dial-up Notes to work *locally*, wherever you are, because you can make local replicas (exact copies of shared databases) and then work on these replicas. You can also send and receive Notes mail by working in a local replica of your mail database and then exchanging documents (replicating) with your mail database on the server.

In this chapter you'll learn how to set up a remote Notes connection so you can get all the benefits of working off-site. Specifically, you'll learn how to:

- Set up your modem for Notes
- Use Notes scripts
- Call your server
- Use database replicas

►► **Getting Started with Dial-Up Notes**

Before you set up a dial-up workstation, be sure that:

- Notes is completely installed on your workstation.
- A Notes-compatible modem is connected to your workstation, as discussed in the next section.

► **Setting Up the Remote Connection**

Before you can use your modem to send and receive mail or exchange data between databases, you must "prepare" Notes by identifying some important communication settings:

1. Choose Tools ► Setup ► Location. The Location Setup dialog box appears.
2. Identify your home server.
3. Select a time zone.
4. Specify the telephone dialing prefixes you need to use in order to call the Notes server.
5. Click on OK.
6. Choose Tools ► Setup ► Mail. The Mail Setup dialog box appears.
7. Select the Workstation-based mail option to work locally on your computer (rather than interactively with a server).
8. Click on the Replication button to select replication options.

► **Creating a Remote Connection Document**

You also need to create a Remote Connection document in your personal Name & Address Book for each Notes server that you call. You use Remote Connection documents to set up modem connections from your workstation to Notes servers. Windows users can also use Remote Connection documents to schedule calls that take place automatically in the background.



►► **NOTE**

If you chose the Dial-up Workstation option during Notes setup, Notes has already created a Remote Connection document for your home server. If all the databases you'll use are on that server, you don't need to compose any additional Remote Connection documents.

Remote Connection documents are created and stored in your personal Name & Address Book. If you specify your modem settings, Dial-up settings, and Remote Connection document properly, you can place a call to a server on demand by using the Tools ► Call or Tools ► Replicate commands. (The server names that appear in the Tools ► Call and Tools ► Replicate lists are taken from your Remote Connection documents.)

To create a new Remote Connection document, follow the steps below. If you don't quite understand what we're doing here, we'll explain everything over the course of the chapter.

1. Click on or open your personal Name & Address Book that's located on a page in your Workspace.
2. Choose Compose ► Connection ► Remote. The Remote Connection Document appears, as shown in Figure 10.1.

FIGURE 10.1 ►

The Remote Connection document

Lotus Notes - New Remote Connection

File Edit View Mail Compose Text Tools Design Window Help

Remote Connection

From the computer: Kenyon G Brown/Sirius

In domain:

To call the computer:

In domain:

Use port(s): COM1

Dial phone number:

Scheduled Calling

Enabled/Disabled: SCHEDULE ENABLED

Call at times: 08:00 AM - 06:00 PM, each day

Repeat interval of: 360, minutes

Days of week: Mon, Tue, Wed, Thu, Fri, Sat, Sun

Tasks: Replication, Mail Routing

Route at once if: 5, mail messages pending

Routing cost: 5

Replicate databases of priority: Low & Medium & High

Comments

3. Enter the name of the Notes server you want to call. (This document is the Remote Connection record for the server you name here.)
4. Enter the name of the communication port you specified in Tools ► Setup ► Ports. It should be a COM port.
5. Enter the server's telephone number. Parentheses and hyphens are ignored, so feel free to use them to make the phone number readable. Use a comma to force a 2-second delay. This is useful for separating credit card numbers and digits that access outside phone lines. For example, it is common in the U.S. to use 9 to access an outside line from a business telephone. If the server has more than one number, you can enter each number separated by semicolons (;). If the first number is busy, your modem will try each number in turn until a connection is established. If you entered a Phone Dialing Prefix in the Location Setup dialog box, enter only the part of the number that follows the prefix. For example, if you entered the area code and exchange as a prefix, enter only the last four digits of the telephone number.
6. Press ☐ to change your selection in the Enabled/Disabled field (it's a toggle). Disabled turns off background exchange for this server; otherwise leave Enabled selected. You might want to select Disabled when you won't have a chance to read new documents from this server for a day or two, or when you know the server will be unavailable for the next couple of replications.
7. Specify a particular time or a range of time to call the server. If you enter a range, your modem will call at the beginning of the range and will keep calling every so often until a connection is made. It will stop calling the server at the end of the range. If you enter a single time, your modem will call periodically for up to an hour until a connection is made.
8. Specify how soon your workstation should call the server again after a successful call. Enter 0 (zero) to call once only.
9. Specify which day(s) of the week to call this server.
10. Select one or both task(s)—Mail Routing and Replication. The task(s) you select will be performed each time this server is called. Mail Routing applies to Notes mail users only: Select it for your mail server Remote Connection document if you use workstation-based mail. Replication exchanges data with all databases for which you have local replicas, including Notes mail if you use it.

11. Specify the number of outgoing mail messages that automatically trigger a call to the server (applies only when Mail Routing is selected under Tasks).



►► TIP

To prioritize databases for scheduling replication, use the default entry of Low & Medium & High, unless you want to create separate Remote Connection documents for databases of different priority. For example, you could set the priority of your mail database to High and other databases to Medium or Low, then specify two Remote Connection documents: one to call the server to replicate High priority databases every hour, and one to call the server to replicate Low and Medium priority databases once a day. Click on a database to select it and then choose File ► Database ► Information. Click on the Replication button. Select the Priority setting you want for this database (Low, Medium, or High). Repeat for all the local database replicas you have in common with this server. Create a separate Remote Connection document for each priority level (or perhaps one for High and another for Medium & Low).

► Setting Up Your Modem

You can set up any Notes-compatible modem to use Dial-up Notes. However, before you do, we recommend that you refer to your modem's documentation for further advice. Modems that aren't Hayes-compatible sometimes have problems running Dial-up Notes. To set up your modem, follow these steps:

1. Choose Tools ► Setup ► Ports. The Port Setup dialog box appears, as shown in Figure 10.2.
2. Highlight a communication port to use with your modem (a COM port on the PC).

4. Specify the maximum number of seconds to wait for a connection to a server before canceling the attempt. The default is 60.
5. Specify the maximum number of minutes your system will stay connected to a server without activity (data transmission). The default is 15. The Hangup if idle option works only if the value you set is less than the value set for the mail polling interval in the Mail Setup dialog box.
6. Select Auto Dial or Manual Dial. The Auto Dial option automatically dials the specified telephone number. The Manual Dial option prompts you to pick up the phone and dial the number. Use this option when you require an operator to complete the call, for example, when you're calling from a hotel room.

When a connection is made, the dialog box closes and the your Workspace reappears.

►► ***Making a Database Replica with Dial-Up Notes***

As we discussed in earlier chapters, a replica is a copy of a shared database that you store either on a network server or on your hard disk. It can be displayed in your Workspace just like the source database. When you create a replica, changes to the original database (source database) or to the replica will be reflected in the other. To update a database replica with information from the source database (and to update the shared database with information that you create locally), you perform replication. To do this, you can use a Remote Connection document or call the server directly using the Call Server dialog box.

Before you can use the database exchange feature of Dial-up Notes to replicate regularly, you must first create a local replica of the shared database you want to use. By creating a local database replica, you can use the database without being connected to a Notes server on a LAN or being connected to a modem all the time.

**NOTE**

You must know the name of the server and the file name of the database you want to replicate before you attempt replication.

To create a new database replica:

1. Choose File ► New Replica. The New Replica dialog box appears, as shown in Figure 10.6.
2. Choose the server where the original database you want to copy is stored. Notes fills this box in for you automatically if you selected a database on your Workspace before you chose the command.
3. Enter the file name, if Notes hasn't filled it in for you.
4. Choose the server where your replica will be stored in the New Replica, Server box. Choose Local to store it on your hard disk.
5. Type a file name (up to eight characters) for the new replica. Notes adds the .NSF extension for you.

FIGURE 10.6

The New Replica dialog box enables you to make a replica copy of a database.

New Replica

Original Database

Server: [Local]

Filename: [APPS\CONSULT.NSF]

New Replica

Server: [Local]

Filename: []

☒ Replicate Access Control List

☐ Only Replicate documents saved in the last days

Initialize and Copy

☒ Now

☐ First replication

[Cancel] [OK]

6. Select one, both, or neither of these options:

- **Replicate Access Control List (ACL):** This option copies the ACL. However, this is selected by default. We recommend that you keep the default, at least until you have reviewed Chapter 18, on security issues.
- **Only replicate documents saved in the last [] days:** Fills the new replica with those documents created in the time period you specify. Selected by default. This option is especially useful for Dial-up Notes users who create smaller subsets of shared databases to use on a laptop workstation.

7. Select one of the options under Initialize and Copy:

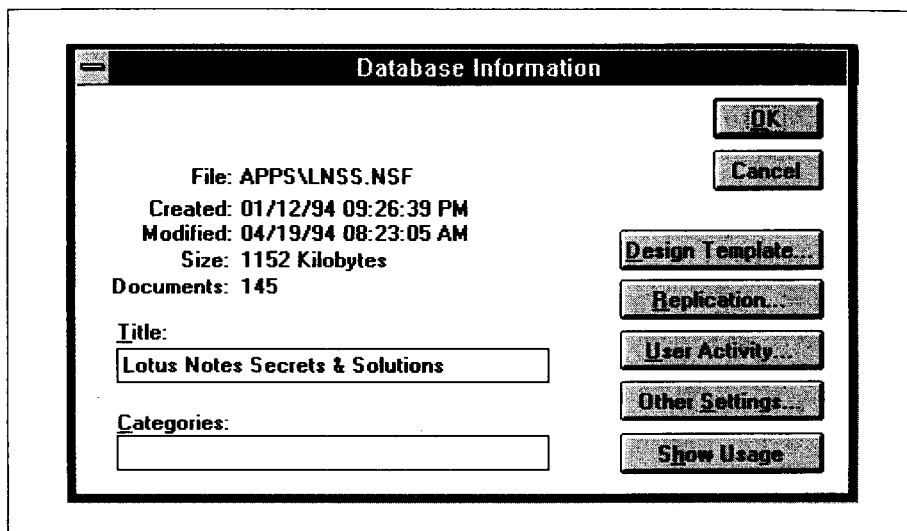
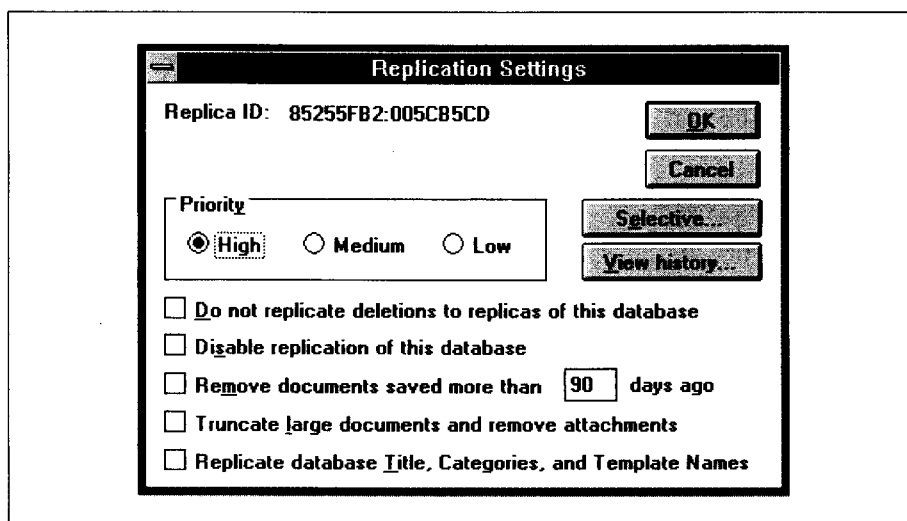
- **Now:** Fills the replica with documents as soon as you select New and attempts to make a phone call to that server right away.
- **First replication:** Fills the replica with documents at the first scheduled or forced replication. Until that time, the replica is called a “replica stub” because it consists of a blank database icon and a database ID number only. There is no design or data.

8. Click on the New button.

Notes creates the replica. The next time you replicate, you can select several options to refine the replication settings according to your needs. To limit the number of documents that will be copied to a database replica during the first replication, choose File ► Database ► Information. The Database Information dialog box appears, as shown in Figure 10.7. Click on the Replication button. The Replication Settings dialog box appears, as shown in Figure 10.8. Select a Priority level. The priority level is used for scheduling database replication. The default is Medium.

Select any of the following options:

- **Do not replicate deletions to replicas of this database:** To prevent deletions to local replicas from being propagated to other replicas of this database. This option is selected by default. In other words, if you delete documents in the replica database located on your Dial-up machine, these deletions won't propagate back to the main server database when you get reconnected.

FIGURE 10.7*The Database Information dialog box***FIGURE 10.8***The Replication Settings dialog box*

Choose this option when you have Author access or higher to a database and need to delete documents to manage space on your Dial-up machine, but these documents are still of relevance to the other users of the database.

- **Disable replication of this database:** To prevent replication of this database during any replications you perform, even if it is included in the databases selected for the replication.
- **Remove documents saved more than <number> days ago:** To remove documents saved longer than the number of days specified. You will be prompted each time you open the database until you answer Yes to delete the documents, change the number of days specified, or turn this option off.
- **Truncate large documents and remove attachments:** To remove bitmaps and other large objects and all attachments from documents being received over a dial-up connection. Select this option to avoid long connect times when it isn't practical to receive large files over a dial-up connection. A truncated file appears with the word *Truncated* as part of document name.
- **Replicate database Title, Categories, and Template Names:** To give this database the same title, categories, and template names as the original database.

Select Selective to display the Selective Replication dialog box. (We discuss selective replication in more detail in Chapter 19.) Select options in this dialog box to replicate only certain types of information from the source database. Select View history to display the Replication History dialog box. The information you see in this dialog box lets you check when and with which server this database last replicated. Click on OK to confirm the changes you make.

►► **Replicating a Database on a Regular Basis**

After you make a local replica of a database the first time, you can use Dial-up Notes to work locally. This means you share databases on your workstation by calling a Notes server regularly and then exchanging data between your local replicas and the shared databases. In other words, you replicate databases when you want to exchange information between an original and a replica of a database. Replicating databases is an easy procedure.